Notice of Allowability	Application No.	Applicant(s)	
	10/090,735	FIGUEROA ET AL.	
	Examiner	Art Unit	
	Junghwa M. Im	2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment of 7/25/2007*.

2. ☒ The allowed claim(s) is/are *1,8 and 26-34*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Junghwa Im
Patent Examiner
Art Unit: 2811

DETAILED ACTION

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Claim 1, A substrate to mount a die having at least one input signal terminal, the substrate keeping an impedance variation between an input signal entering the substrate from a receiving substrate and an output signal provided to the at least one input terminal below a predetermined value, the substrate comprising:

a dielectric core member having an example thickness of 800 microns;

a first plurality of dielectric lamination layers on a first side of the dielectric core member, each having an example thickness of 30 microns, and wherein the dielectric core member comprises material of different dielectric permittivity in comparison to a permittivity of material of the dielectric lamination layers;

a second plurality of conductive layers on the first side of the dielectric core member, each having an example thickness of 25 microns, and including at least one connector a plurality of ball grid array (BGA) connectors on a first surface of an uppermost one of the second plurality of conductive layers to couple to the at least one input signal terminal corresponding terminals of the die; and

a single conductive layer on a second side of the dielectric core member, having an example thickness of 17 microns, wherein the single conductive layer comprises at least one land plurality of lands; and to couple to the input signal from the receiving substrate.

Claim 8, A system comprising: a die having a plurality of terminals, including at least one input signal terminal;

a receiving substrate having a plurality of terminals, including at least one terminal to provide an input signal;

a layered substrate including

a dielectric core member;

a first plurality of dielectric lamination layers on a first side of the dielectric core member, wherein the dielectric core member comprises material of different dielectric permittivity in comparison to a permittivity of material of the first plurality of the dielectric lamination layers;

a second plurality of conductive layers on the first side of the dielectric core member, including at least one connector on a first surface of an uppermost one of the second plurality of conductive layers, the connector being coupled to the at least one input signal terminal; and

a single conductive layer on a second side of the core member, wherein the single conductive layer comprises at least one land coupled to the input signal from the receiving substrate.

Claim 31, A substrate to mount a die having at least one input signal terminal, the

substrate keeping an impedance variation between an input signal entering the substrate from a receiving substrate and an output signal provided to the at least one input terminal below a predetermined value, the substrate comprising:

a dielectric core member;

a first plurality of dielectric lamination layers on a first side of the dielectric core member, wherein the dielectric core member comprises material of different dielectric permittivity in comparison to a permittivity of material of the first plurality of dielectric lamination layers;

a second plurality of conductive layers on the first side of the dielectric core member, including at least one connector on a first surface of an uppermost one of the second plurality of conductive layers to couple to the at least one input signal terminal of the die; and

a single conductive layer on a second side of the core member, wherein the single conductive layer comprises at least one land to couple to the input signal from the receiving substrate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Junghwa M. Im whose telephone number is (571) 272-1655. The examiner can normally be reached on MON.-FRI. 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne A. Gurley can be reached on (571) 272-1670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Junghwa M. Im
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